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10/808,642	03/25/2004	Darren Fawcett	BAI525/	6126

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EXAMINER	
SINGH, HIRDEPAL	
ART UNIT	PAPER NUMBER
2611	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/808,642	FAWCETT, DARREN	
	Examiner	Art Unit	
	HIRDEPAL SINGH	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8,10-12,14-17 and 19-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8,10-12,14-17 and 19-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 November 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on November 05, 2008 with the request for continued examination. Claims 1-5, 8, 10-12, 14-17 and 19-22 are pending and have been considered below.

Response to Arguments

2. Applicant's amendment corrected the informalities in the drawings. Therefore, the objection to the drawings is withdrawn.

3. The informalities in the claims have been corrected by the amendment. Therefore, the objection to the claims is withdrawn.

4. Applicant's arguments with respect to claims 1-5, 8, 10-12, 14-17 and 19-22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 14-17, 19 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 14 recites the limitation "the bit error rate" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-2, 12, 14-15, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakkis (US 6,694,131) in view of Wetzel (US 7,203,457) further in view of Merio (US 7,245,892).

Regarding claims 1 and 14:

Lakkis discloses an apparatus (figure 3) for the reception of data transmitted to the apparatus over any of a range of radio frequency signals within a known frequency band or bands, the radio frequency signal selectable by the apparatus in response to a user selection of a television or radio channel to be generated by the apparatus from the received data (abstract), said apparatus comprising:

a tuner to tune to the intermediate frequency signal (abstract; column 8, lines 7-10) wherein a-bit error rate output of the data carried by the intermediate frequency signal is monitored (column 3, lines 65-67);

a control means (column 8, lines 7-10) for introducing an offset frequency value for the intermediate frequency signal; and

wherein if the bit error rate exceeds, during reception, a predefined bit error rate limit (column 3, lines 60-67), the down-converter is controlled to move from receiving a selected radio frequency signal within a low brand frequency range to receiving a radio

frequency located in a high band frequency range or vice versa (column 4, lines 1-14, when bit error rate exceed a limit the system adaptively selects a frequency), and the apparatus is then operated to tune to a new frequency equivalent to the intermediate frequency signal plus or minus the offset frequency value (column 7, lines 5-12; column 9, lines 26-44), the offset frequency value being generated such that the new frequency remains within the intermediate frequency range (column 5, lines 40-48; column 6, lines 8-14).

Lakkis discloses all of the subject matter as described above except for specifically teaching that (1) one low noise block down-converter for down converting the selected radio frequency signal within existing frequency band to an intermediate frequency signal within an intermediate frequency range between 950-2150 MHz; and (2) if bit error rate exceeds a limit, the system tune to new frequency within a intermediate frequency range, new frequency is equal to intermediate frequency plus or minus the offset value.

However, regarding item (1) above, Merio in the same field of endeavor discloses a system and method for receiving satellite signals where a low noise block down-converter down converting (240 in figure 2) the selected radio frequency signal within existing frequency band to an intermediate frequency signal within an intermediate frequency range between 950-2150 MHz (column 2, lines 34-38; column 3, lines 1-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a LNB low noise block down-converter as taught by Merio in the system of Lakkis in order to take advantage of its features to bring wide block of

relatively high frequencies, amplify and convert them to similar signals at lower intermediate frequencies, as the loss and attenuation at low frequencies is less, when the bit error rate of a selected frequency signal exceeding the predefined limit, another LNB low noise block down-converter frequency range band is used to bring the selected range closer to the required frequency range so that the tuner is able to select the particular intermediate frequency.

However, regarding item (2) above, Wetzel in the same field of endeavor discloses a system and method for achieving a rapid signal acquisition for a receiver where a low noise block (104 in figure 1) down converter, down converting the selected radio frequency signal to an intermediate frequency signal (column 5, lines 15-21) within a range and if bit error rate exceeds a limit (interference in column 8, lines 50-65), the system tune to new frequency within a intermediate frequency range (column 3, lines 1-10, the receiver tune to a frequency appropriate for particular channel i.e. within channel range;), new frequency is equal to intermediate frequency plus or minus the offset value (column 9, lines 5-30, in case of a frequency drift i.e. interference or other reason, the frequency is adjusted by offset value).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the low noise block of Wetzel in the Lakkis system to down convert the signal to intermediate frequency and updating the tuning when interference exceeds a limit to tune to a frequency within a predetermined range to take care of offset of the frequencies occurring because of interference or other reasons in the carrier signals received by the tuner of the indoor unit if the received signal offset from

its nominal value IF signal cannot be properly demodulated and the information they represent cannot be properly reconstructed so the offset frequency is monitored and is adjustment by offset frequency value keep the tuned frequency within the range of the preceding circuitry for the reliable reproduction of the signal while the updating to new frequency using a offset value adjusting algorithm keeps the system simplicity.

Regarding claims 2 and 15:

Lakkis discloses all of the subject matter as described above and further discloses that upon re-tuning to the frequency including the offset frequency value, the bit error rate is monitored and if the bit error rate value is within the predefined bit error rate limit (column 10, lines 25-35) the tuner continues to tune to the new frequency value including the offset frequency value (figure 7).

Regarding claim 12:

Lakkis discloses all of the subject matter as described above and further discloses that the apparatus includes a broadcast data receiver (figure 6) provided to receive the data on the selected radio frequency signal, decode (706 in figure 7) the same and use the data to generate video and/or audio (106 as in figure 1; column 1, lines 20-30 "cellular phone generates audio/video based on the received data") for the selected television or radio channel to which the selected radio frequency is related.

Regarding claim 21:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the low and high frequency ranges are within the Ku band, but it is noted that applicant is trying to use a frequency range or band allocated by FCC

(federal communication commission) for applications as satellite communication. Therefore, it would have been obvious to a person of ordinary skill in the art to implement the space to earth communication system by using a range of frequencies such as and including the Ku band for communication purposes.

Regarding claim 22:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the offset value is 50 MHz, it is noted that using a specific offset frequency in the system is a mere design choice, therefore little if any patentable weight is given. Also, one of ordinary skill in the art would have recognized to use any value such as 50 MHz for offset frequency in the system at the time of invention for tuning the intermediate frequency when the bit error rate exceeds a set value aand still keep the system in the specified range.

10. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakkis (US 6,694,131) in view of Wetzel (US 7,203,457) further in view of Merio (US 7,245,892) as applied to claims 1 and 14 above, and further in view of Naruse (US 2002/0183026).

Regarding claims 3 and 17:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the predefined bit error rate limit is 0.0002.

However, examiner notes that this is just a design choice, further Naruse in the same field of endeavor discloses a system for data communication where the bit error rate BER is 0.1% = 0.001 (figure 3; paragraph 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a lower bit error rate for the system in order to make the reception quality better and keep the interference below a required level.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lakkis (US 6,694,131) in view of Wetzel (US 7,203,457) further in view of Merio (US 7,245,892) as applied to claim 1 above, and further in view of Abraham et al. (US 6,880,115).

Regarding claim 4:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the tuner is controlled to tune to radio frequencies within the digital video broadcasting DVB intermediate frequency band for satellite tuners.

However, Abraham et al. in the same field of endeavor discloses a system for receiving radio frequency RF signals where the radio frequencies are within the digital video broadcasting DVB intermediate frequency band for satellite tuners (column 1, lines 12-34; column 3, lines 38-55; column 6, lines 28-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement the use of tuning apparatus to control the frequencies in digital video broadcasting DVB intermediate frequency band for satellite tuners in order

to make the system compatible with the standards used in different parts of the world to take advantage of the wider scope in today's competitive market.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lakkis (US 6,694,131) in view of Wetzel (US 7,203,457) further in view of Merio (US 7,245,892) as applied to claim 1 above, and further in view of Bruckmann et al. (US 7,009,641).

Regarding claim 5:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the bit error rate of the selected radio frequency signal is caused to exceed the predefined bit error rate limit by interference caused by any or any combination of global system mobile communication GSM or digital enhanced cordless telecommunication DECT devices, WLAN wireless local area network devices and/or devices which operate in the surrounding environment at a relatively close radio frequency to the selected radio frequency.

However, Bruckmann et al in the same field of endeavor discloses a system for receiving radio frequency RF signals where bit error rate exceed the predefined bit error rate limit by interference caused by any or any combination of global system mobile communication GSM or digital enhanced cordless telecommunication DECT devices, WLAN wireless local area network devices (column 3, lines 62-67; column 4, lines 50-55; column 6, lines 32-45) and/or devices which operate in the surrounding environment at a relatively close radio frequency to the selected radio frequency.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement the use of tuning apparatus in the world wide standards for communication e.g. global system mobile communication GSM or digital enhanced cordless telecommunication DECT devices, WLAN wireless local area network and the interference caused in the operation of the apparatus is therefore definitely caused when the systems is used in the above mentioned standards as making the system compatible with well known standards helps in making it a commercial success

13. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakkis (US 6,694,131) in view of Wetzel (US 7,203,457) further in view of Merio (US 7,245,892) as applied to claims 1 and 14 above, and further in view of Middeke et al. (US 6,445,907).

Regarding claim 8 and 19:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the LNB low noise block down-converter is multiband or programmable and~ upon the bit error rate of a selected frequency signal exceeding the predefined bit error rate limit, the low noise block-down converter is controlled to receive a frequency equivalent to the selected radio frequency signal plus or minus a fixed offset frequency value.

However, Middeke et al in the same field of endeavor discloses a system for receiving radio frequency RF signals with controlled bit error rate where the apparatus includes low noise block down-converter that is programmable to move from receiving a

selected radio frequency signal within a low band frequency range to receiving a frequency located in a high band frequency range or vice versa (column 1, lines 42-46; column 4, lines 15-20; column 6, lines 44-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a LNB low noise block down-converter in the system in order to take advantage of its programmable features to bring wide block of relatively high frequencies, amplify and convert them to similar signals at lower intermediate frequencies, as the bit error rate exceeds predetermined value to tune to the required frequency to keep the selected signal with minimal interference.

14. Claims 10, 11, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakkis (US 6,694,131) in view of Wetzel (US 7,203,457) further in view of Merio (US 7,245,892) as applied to claims 1 and 14 above, and further in view of Mobin et al. (US 6,522,696).

Regarding claim 10:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the offset frequency value is initially set at a first value and added or subtracted from the original frequency and the apparatus re-tuned to the new frequency.

However, Mobin et al in the same field of endeavor discloses a system for receiving radio frequency RF signals with frequency correction where the offset frequency value is initially set (column 5, lines 32-36) at a first value and added or

subtracted from the original frequency and the apparatus re-tuned to the new frequency (as shown in figure 1A and 1B "AFC block 32 re-tunes the frequency based on control signal from adaptive tracking block 58").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to set the offset frequency value initially and added or subtracted from the original frequency and re-tune the system as taught by Mobin to the new frequency when the bit error rate of a selected frequency signal exceeding the predefined limit, to keep the frequency range closer to the required frequency range so that the tuner is able to select the particular intermediate frequency with allowable bit error rate.

Regarding claims 11 and 16:

Lakkis discloses all of the subject matter as described above except for specifically teaching that if the bit error rate still exceeds the predefined level then successive increases in the offset value are made, the apparatus re-tuned and the bit error rate re-checked at each increase and this is continued until the bit error rate is at or below the predefined bit error rate limit.

However, Mobin et al in the same field of endeavor discloses a system for receiving radio frequency RF signals with frequency correction where if the bit error rate still exceeds the predefined level then successive increases in the offset value are made (column 12, lines 40-45), the apparatus re-tuned and the bit error rate re-checked at each increase and this is continued until the bit error rate is at or below the predefined bit error rate limit (column 6, lines 62-67 "equalizer keep updating the frequency offset until within predefined number/limit").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to set the offset frequency value initially and added or subtracted from the original frequency and re-tune the system as taught by Mobin to the new frequency when the bit error rate of a selected frequency signal exceeding the predefined limit, to keep the frequency range closer to the required frequency range so that the tuner is able to select the particular intermediate frequency with allowable bit error rate

Regarding claim 20:

Lakkis discloses all of the subject matter as described above except for specifically teaching that the control means is provided in software within said apparatus.

However, Mobin et al in the same field of endeavor discloses a system for receiving radio frequency RF signals where the control means is provided in software (column 9, lines 1-8 "DSP is implementation is based on software") within said apparatus.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use software means to control the system bit error rate in order to make the system adaptable to the changes in the incoming signal frequency, phase and to keep the interference and bit error rate under control, while making the system able to be updated according to future needs.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Hirtzlin et al. (US 7,274,919) discloses a radio frequency transmitter and receiver with LNB down converter tunes in required IF range.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HIRDEPAL SINGH whose telephone number is (571) 270-1688. The examiner can normally be reached on Mon-Fri (Alternate Friday Off) 8:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. S./
Examiner, Art Unit 2611
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